Notebook Series -- Notebooks by Experimenters Other Than Edison
Phonograph Record Experiments -- W. W. Dinwiddie Disc Books
Notebook, N-19-01-10.1

This notebook was used by William W. Dinwiddie and his assistant Henry E. Thayer during January-July 1919 for notes on the production of blanks for disc records. There is one additional entry from October 1919. Edison's supervision of the work is indicated by Dinwiddie's references to his suggestions and comments. The experiments are numbered from D401 through D467. The entries describe the methods used in the manufacture and preparation of the blanks, particularly the baking process, and contain remarks about the results of the experiments. Several indicate that a particular print sounded good or bad to Edison or that "Mr. E can't hear surface." Also included are lists of clays, along with remarks about their characteristics, sources of supply, and prices. The notes indicate that W. R. Simpson assisted Dinwiddie in some of the work and that Charles T. Dally used some of the same materials as Dinwiddie in his experiments. Pasted into the book is a one-page note by Edison pertaining to a patent on a shellac substitute that he wanted Dinwiddie to try. The front cover is labeled "Dinwiddie D-401 -" and "Disc." The pages are unnumbered. Approximately 100 pages have been used.

January 10-1919.

II 401

Ball mill made from
Tumb. was finished Dec 14-1918

II 401

70 g garnet Lac ground in copper mill
35 g rosin fine ground in " "
280 g No 1 Denat. Alcohol.

Shaken in flask until all dissolves.
70 g cotton dust.
977 g fine china clay - "Southern" from Shields.

977 = 84.8 %
70 6
70 6 } 9%
35 3
9.8
1152 | 97700 | 84.8 %
9216
5540
4608
932

1152 | 7000 | 6.0 %
6912
880

added the clay so slowly that the alcohol dried out,

put with 402

D 402

42	garnet lac	6%
28	Rosin	4%
~~42~~	Cotton dust	6%
588	Clay	84%
700		100%

168 Alcohol 24%

made a very wet mix —
Can be made with considerably less alcohol.

broke up into small pieces and dried in vacuum drier for 2 hours — Pump being used by "Slimo" at same time. only 18"-22" vacuum. Steam 10-20 lbs. on plates.

Made one blank Jan 13-19 — too soft — not enough binder

D403

42g garnet lac 6%
28g Rosin 4%
42g cotton dust 6%
* 588 g chalk - 84%
100%

168g Alcohol.

Made 3 P.K. blanks, Jan 13-19
varnished with 288 varnish -
one printed gave pull outs all over.
coated the other two with reg varnish Jan 17.

D 404

70 g	garnet lac	10%
49 g	rosin	7%
56 g	Cotton dust	8%
525 g	clay	75%
700		
17.5 g	alcohol	

Made 3 lots like above in small mixer –

3 blanks out, except for fine marks like above apparently cracks

2 coated with reg varnish –
1 " " 288 varnish –
Sounds V.V. good Jan 22
Mr. Edison can't hear surface

D 405

Garnet Lac	8%	~~56~~
Rosin	6%	42
Cotton	8%	56
Chalk	78%	546
	100%	700

alcohol 175g

Made 4 blanks –
coated 2 with 288 varnish
and 2 with reg varnish –
fine cracks showed in two of the blanks similar to the cracks in 404 but not so numerous. Evidently blank is still too rich.

D406

Garnet Lac	8%	x 7	56g
Rosin	4%		28g
Cotton	8%		56g
Chalk	80%		560g
		total	700

175g Alcohol

One printed pull with on margin and varnish cracks 2 one radial from edge seems to be in blank. M.G.

D407

Garnet Lac	4%	x7	56g
Rosin	8%		28g
Cotton	8%		56g
Chalk	80%		560g
			700

Alcohol 175g –

Bottom margin – looks good – much harder surface than the linseed oil dope. Dally is wrong – and a little more than regular –

D-408

Garnet lac	8%	x 7	56 g.
Rosin	4%		28
Cotton	8%		56
Chalk	80%		560
			700 g

Alcohol 175 g.

G.K. Heady except P.O. on edge –
Conductivity regular –

D-409

Garnet Lac	8%	x 7	56g
Rosin	4%		28g
Linseed Oil	1%		7g
Cotton	.8%		5.6
Chalk	79%		553
	100		700

150g Alcohol –

"Cumerone" – Rosin "Koppax Moulding Resin"
Sample #4548 from H. Koppers Co. Laboratories
Ohara and Thackery Sts Pittsburg, Pa.

Solubility.

dissolves very freely in Benzol, * Solvent Naptha
X Carbon bisulphide, carbon Tetrachloride,
amyl acetate.

* Alcohol will not dissolve it at all
Kerosene dissolves a very small fraction cold
Straw oil is not a solvent
Linseed oil dissolves a fraction
Spirits of Turpentine dissolves a large fraction.
With Carbon bisulphide a small fraction is undissolved though most of it dissolves very quickly.

D-410

~~Asphalt 36/2 15% x 7 105 g~~
~~Cotton 8% 56~~
~~Chalk 77% 539~~
~~100% 700~~

Solvent Naptha 175 –

Asphalt.	10%	x 21	210
Rosin.	5%	x 21	105 –
Cotton.	8%	x 21	168
Chalk	77%	x 21	1619
	100%		2100

Solvent naptha – 175 x 3 = 525 –

D 411

Asphalt 12%	× 5 =	60 g
Rosin 8%		40
Cotton 20%		100
Chalk 60%		300
	total	500

Solvent Naptha 150 g

W.G.

D 412

Condensite Resin 10% x 7		70. g
Para 1/10 of 1%		.7 g
Cotton	8%	56.
Chalk	82%	574
alcohol 175 g	total	700.7 g

Made 4 blanks of this and ground in ball mill - after drying in vacuum drier —

Varnished Feb 18-19

Split in two in printing stuck hopelessly to the mould on both sides and had to be scraped off. — Easily soluble in alcohol showing that condensate was not completely cured. longer schedule in press make bring one out OK. Feb 21-19.

413 April 2 – 1919 –

Experiment to see if record may be printed in hot press and transferred to cold press to cool.

Made two O.K. prints by this process one required 40 sec to transfer and the other 30 sec. showing that if presses are rigged up side by side there will be no difficulty to operate quickly enough when only punching thru is required. –

This was to test out scheme suggested March 27-19 and filed in Legal department.

double hydraulic press –

Hot press on one side }
cold press on other side } separate rams –

Circulate oil at constant temperature in hot press – to obtain highest temperature.

Oil will give higher and more constant temperature than steam.

413½

½ china wood oil } heated in casserole over
½ I Rosin. } bunsen flame. and took off small sample on glass plates and small dishes to 610°F then let cool — Heated again to 610°F - materially thicker but not condensed. Heated a third time to 610°F and cooled. seems somewhat elastic when drawn out in a thread it springs back.

D414 April 18-1919

100g China wood oil
100g I Rosin.
in casserole over bunsen burner —

10^{10}	Bun.	Start.
10^{20}	melted	flame off for about 3 minutes.
10^{25}	300°	
10^{28}	350°	
10^{32}	400°	
10^{45}	500°	Adjusted flame down
10^{51}	500°	
11^{00}	475°	
11^{10}	496°	
11^{23}	506°	
11^{45}	506°	
12^{00}	508°	Gas Off.
1^{00} pm	Cold - very sticky - not elastic	

A Melted and poured out 100g for (D 558) —
Started to heat remainder, 1^{22} pm.

1^{29}	510°	Adjusted flame down
1^{31}	530°	" " "
1^{37}	502°	" " up
1^{43}	500°	
1^{49}	502	Flame off — 49g left

25% loss

10^{43} 535°
10^{46} 535°
10^{50} 537° Off. Jelly forming around edges
weighed out { one lot 80g
one lot 60g
about 10g left in casserole.

4 × 80 = 320
60
10
390g total from 500g to start.
110g loss, = 22%

A

D-415 April 18
Melted on steam plate 250g Rosin in 250g Tung oil.
Started over Bunsen flame at 4 Pm
4^{03} Pm 230°
4^{22} 370° put iron screen around flame
4^{45} 435°
5^{49} 460° Off
8^{20} Am Started cold April 19
8^{32} 250°
8^{34} 280° Added another burner.
8^{55} 500
9^{19} 490
9^{45} 490 Adjusted gas up.
9^{55} 510
10^{00} 516 See D560 — 559-1, 559-2, 559-3
10^{05} 525 Off and measured out 3 lots of 80g each.
10^{11} 365° Started heat again on remainder.
10^{13} 400°
10^{15} 440°
10^{20} 520 Adjusted flame down.
10^{21} 530
10^{28} 500 " " up
10^{31} 490
10^{32} 502
10^{36} 530 " " down
10^{38} 535

D-416 April 21-19

250g China Wood Oil 250g Rosin -

Start cold 9^{55} Am two Bunsen burners

	250°	10^{02}	
	305°	10^{05}	All rosin just melted
	385°	10^{09}	
	400°	10^{10}	
	465°	10^{16}	
	490°	10^{20}	
	510°	10^{23}	Flames adjusted down
	515°	10^{24}	
416-A	520°	10^{25}	Off weighed out 80° for D-560-1
	445°	10^{29}	Started again
	445°	10^{30}	Flames adjusted up.
	460°	10^{33}	
	470°	10^{35}	
	492°	10^{39}	
	505	10^{40}	Flames adjusted down
	500°	10^{44}	
	495	10^{47}	" " up
416-B	502	10^{51}	Off weighed out 80 g for D-560-2
	430	10^{53}	
	490	11^{00}	
	500	11^{01}	flame adjusted down
	502	11^{03}	
416-C	515	11^{08}	Off. weighed out 80g for D560-3

D-417

Tung oil & Rosin — melted together.

1	Tung oil	50%	Rosin	50%	Tung	100g	Rosin	100g
2	"	40	"	60	"	80	"	120
3	"	30	"	70	"	60	"	140
4	"	20	"	80	"	40	"	160
5	"	10	"	90	"	20	"	180

all heated to 350° and cooled

5 is solid - sticky - brittle - pieces pull out with fracture like rosin.

4 is liquid but very stiff.

D-417 - B

Blowing Linseed oil - 1st lot -

96°F started 5 PM 4/29/19 } 7½ lbs Linseed oil (Raw).
cold stop 7 Am 4/30/19 } 14 hours
180°F start on started 9 15 Am 4/30/19
160°F
220°F at 2 00 PM 4/30/19 sample looked like raw oil no smell
220°F at 3 10 PM 4/30/19 (20 hours) very light in color, acrid odor.
stop 6 05 PM 4/30/19 cold water on (23 hours)
220° start 9 15 Am 4/31/19 small bubbles drifting around
12 25 PM 5/31/19 stop - 26 hours - Thick as honey flows like honey does not form drops.

D-418

Blowing Raw Linseed Oil. } Saturday night May 31-19

Start 9 15 PM - (220° F approx)
stop 7 15 Am - June 1st 10 hours.
start 11 20 Am
stop 6 40 PM 7 hr 20 min
after 13 hours cleared up and started acrid odor.
after 17 hours bubbles come off.
Started Monday 8 40 AM.
Off 4 50 PM. 8 hr 10 min

25 ½

A very stiff jelly but not quite solid like the Nairn Linoleum Co. material

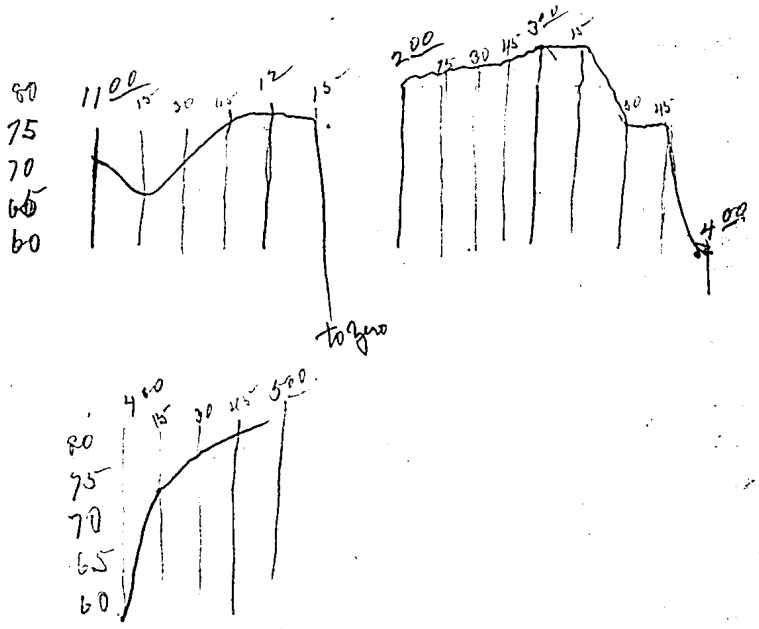
about 1 hour before solid bubbles stop coming off.

D-419 –

Blowing Linseed Oil – 5d Batch –

Start 9 50 P.M. June 2d – } – 9h 10m
Stop 7 00 A.M. June 3 – } apparently no change –
Start 7 57 A.M. June 3 –.
11 55 A.M. Sharp odor starts – (13h 8m)
3 10 P.M. Small bubbles start to come off.
(16h 23m)
9 35 PM – steam off – water on – (22h 48m)
8 45 AM June 4 start –
9 20 AM off – hot. Small bubbles still (23h 23m)
coming off. – full of white foam. but
gobs of foam just about stopped
from being thrown out, V. thick liquid
Soluble in benzol –

Steam pressure chart -



D-420

Blowing Rosin in steam jacket kettle —

Melted rosin in kettle - Steam pressure 75 lbs

Air on 11 07 AM June 4-19

Steam cut off from power plant 12 15 — 1 h 8 m

heated up and started again 2 00

Stopt splashing up 4 05

Too thick for blower 8 35 Cooled & taken out

total time 7 h 43 m

D-421 Blowing Resin in steam jacket mixer, June 5-1919

Blower started 9.50 Am
stopped 12.20 P.M. Steam pressure too low
started 1.05
sample out 3.13 very hot steam 115 lbs
sample out 4.45
" " 10.26
off — 11.00 PM

Steam pressure very variable — 50 to 115 lbs

Melting Point increased from 156° to 194°

D422 · Blowing Linseed Oil
start 9 20 AM May 5 – finish
9 30 AM May 6 1 – 24 hrs 10 min

A little more stiff/Jelly than 418

D423 — June 7-19

Blowing Linseed oil —

2d 5 gal lot from Hochenjoo.

6.10 ~~Start~~ 6.10 PM

13.30 at 1.30 AM 7 hours 20 min it

7.20 was too thick for air to penetrate —

(thicker than 422) and color

still about the same as when

it started. got 75 lb steam pressure

Trouble was that Major cut down exhaust, and

Repeat June 9 with same oil

9.20 start 9.20 AM. see 424

7.20

16.40

4.40

12
2.40
3.20
18.00

D424 —
Same Linseed oil as 423
start 9.20 A.M., June 9.
a 8.20 Am sharp smell is very evident and oil has cleared up, 11 hours
Off at 3.20 A.M. 18 hours
~~start at~~ 9.00 Am June 10 —
off at 12.10 3.10 hrs
21.10 hrs

D425

Blowing linseed oil

One gallon "Atlantic" linseed oil from Mr Gotlick.

Started 2.10 PM June 10-19.

at 9 PM oil has cleared up and gives off very sharp smell.

attempt at 4.10 Am (14 hours)

Start again at 9.15 Am June 11-19.

D425

Blowing Linseed oil

One gallon "Atlantic" linseed oil from Mr Gotlick,

Started 2.10 PM June 10-19.

at 9-PM oil has cleared up and gives off very sharp smell

attept at 4.10 Am (14 hours)

Start again at 9.15 Am. June 11-19.

weighed out 5000 g of resin - that had been melted and strained -

Weight 4658 g taken from the pot - not counting several small samples.

6½ % loss

Completely soluble in Benzol
Completely soluble in Denatured alcohol.
Completely soluble in Turpentine (slow Benzol like, a little slower)
About half soluble in Benzine. a gray (dry) powder is precipitated out when the benzine readily dissolves large lumps of the resin.
This powder insoluble in Benzine is completely soluble in denat. alcohol.
When alcohol is evaporated off over steam plate, a clear resin is left, brittle and weak like common resin, when all of alcohol is out but it is very difficult to get rid of all of the alcohol.

not tell

Immediate

Something has replaced a Shellac substitute,

Oxidize Rosin, dissolve out crystalline part by Benzol, Petroleum Benzene, Turpentine. This leaves the shellac like amorphous Rosin. This is freed of dirt by dissolving in alcohol & filtering

Try it when you get time —

See D-426

See 765

D-426

Blowing Rosin.

Started 4 45 PM 295°F

Turned off small burner and turned down large burner.

4 55 PM 250°F Turned up gas —

5 15 PM 250°F lighted small burner —

5 25 PM 320°F

5 28 PM 330°F Small burner off

5 48 PM 320

3 20

9 35 PM 3 20 No rosin smell at all — very viscous and hard caked down over rivets cut off air and gas —

weight ~~dont~~ only (about)

5000 g rosin from barrel (I)
2470 g left in kettle —
30 g est. wt. of sample taken

— 50% loss —
distilled off and probably cracked

D-427 Rosin

Cooked and blown 6 hours by Major night of June 11 at (320°F?) M.P. 174°F Sp. Gr. .977

again started melting 9 53 Am June 12 —

Started blower	10 27	360°F
raised burner one (2×4) and opened flames	10 36	350°F
	10 47	380°F
	10 52	395°F
small burner off	11 00	420°F
	11 10	400°F
	11 27	386°
Sample at 11 36	11 33	400° — M.P. 180°F
Turned down gas little	11 43	420° — 1 28 Am 245°F
Off —	2 04	Thermometer broke — about 400-420 to the end

Melting point determined by Simpson 277°

D.428 Rosin

5000 g. I rosin from barrel — melted and 500 g. lead peroxide added slowly in fine powder — stirred each time an O_2 is added until foaming stops.

Melting point determined by Simpson

$\left\{\begin{matrix}172^\circ \\ 180^\circ\end{matrix}\right\}$ F

Melting pt of original rosin 148°F determined by Simpson

Weight of rosin taken out 5267 g.

D-429

5000 g I Resin M.P. 148°F (Simpson)

started to melt 10.16 AM June 13-19

Started blowing 10.40 AM. 350°F

25 min to melt.

Temperature maintained at 350°

Sample out 11.40 M.P. 183 F (Simpson)

Sample out 12.00 M.P.

added 500 g Lead Peroxide – slowly in powder

air off at 12.00 all peroxide in by 12.22 gas off.

gas reduced at 12.00 Temp. went up to

400°F during addition of Lead peroxide

Weight taken out of kettle 4994 g

D430

5,000g Rosin heated ~~to~~ to about 400°F and 185 g MnO_2 precipitated added a little at a time and cooked until all the black dissolved.

Weight of rosin removed from Kettle 5051 g

D431

Blowing linseed oil — same oil as D 423-424 — about 2 gallons — all the pot will hold when foam is highest.

Started blowing 10.50 AM. June 16-19

stopped at 12.00 Midnight. 13h 10m

started again 8.40 AM June 17

off 12.40 PM " Solid 4h

17h 10m

D-432

5000 g I Rosin from barrel

300 g Manganese dioxide powder.
(ground pyrolusite)

Cooked until black all dissolves
leaving Brown transparent rosin
(about 400°F for about 30 min

D-433 June 19-19

5000 g I Rosin —

500 g Manganese dioxide powder
about 80% MnO_2 ground Pyrolusite

Rosin melted —

and MnO_2 added very slowly about
1/2 hour required — last ounce
of MnO_2 caused the mass to
solidify to wax like consistency.

Taken out of pot 4939 g liquidus
small cardrole for Fr. pt. test
and samples —

2d lot started July 9-19 [redacted]

Melted again with both burners and
stirred very little.

all melted — started to add Pyrolusite 10 50

all Pyrolusite in 10 52

must solid 11 07

5080 g [illegible] taken from kettle

turned off burners and put can
of water under to cool —

see 630

Dally's mix — June 20

4250 clay —
1264 Binder —
380 Floc —
93 g as black —
5987 g

~~[illegible]~~

~~[illegible]~~

~~[illegible]~~

~~4200 clay~~
~~1250 binder~~
~~375 floc~~
~~5825~~

70% clay
21% binder
6% floc
1% graphite

D434

5000 g Rosin from Barrel
400 g Manganese Dioxide Powder
same as used in #33 (80%)

7500 g Rosin
600 g Manganese dioxide

heat solid in pot same as 433 —
40 minutes after all rosin melted
and addition of manganese started — only
large burner after 10 minutes.

this is 4/5 as strong in
tensor as D433

7,850 g put in
7,613 g taken from pot
237 g lost.

D435 June 25-19

5000g rosin,
300g – (6%) Ground Pyrolusite,
Same as used in 433-4

4891g taken from pot.

D436

4.56-% of 80% MnO_2 = same oxygen content as 10% of pure lead peroxide —

5000 g Rosin —
230 g ground Pyrolusite.

5015 g taken from pot

455
5
227.5

D 437

200 g Raw linseed oil —
10 g Ground Pyrolusite,

heated in small crucible —
apparently no combination below 500°F

3d lot } 10000 g Rosin
July 14-19 } 700 g Pyrolusite,
Went Solid in pot —

D438
5000 g Rosin
350 g 7% Ground pyrolusite same ground in 433-4

Melted Rosin — temp around 400°
added Pyrolusite, heated until
all dissolved then ran temp up from
460° to over 500° for 15 minutes,
Made by Simpson July 1-19 —

Rosin taken out of (1st (4357 g))
(2d lot) taken out of pot (4310 g)

D-439

one gallon (7½ lbs) raw linseed oil

started blower 5.10 } Steam on about 220°F

off 10.20

$5^h 10^m$

This oil will take up MnO_2 at 350°F about the same as rosin. but raw oil takes up very little MnO_2 even at 500°F.

D-440

Blowing Linseed oil –
(one gallon) 7½ lbs Raw oil, 80% Linseed
30 g about 1% of Pyrolusite,

Started 2 30 Pm July 7-19

4 45 PM very sharp odor
7 55 AM July 8 off

17h 25m

Pyrolusite apparently has no effect.

D441

Blowing Linseed oil —

7½ lbs Raw Linseed oil.

100 g D433 Rosin — MnO2 PbO2

300 g D429 Rosin

Started blowing 3 PM July 8

added Resinates 3 10

finished 3 30 Am July 9

12h 20m

about same as without driers but surface is less sticky after short exposure to air, color is very dark red —

D442 — See 443

Blowing Linseed Oil —

7½ lbs Raw oil —

200 g Prussian Blue —

Heated to about 500° F in Copper pot added the Blue — Only a small amt of the Blue combined the rest filtered out later —

Poured them cheesecloth into the Blowing kettle.

Started Blowing 2¹⁵ PM July 9 —

Does not foam like the raw oil.

Solid 1²⁰ PM July 10

23 Hours

D443

7½ lbs Raw linseed oil, heated to 500° F. and the prussian blue (10 g.) previously ground in about a pint of the oil is poured in and the oil heated until no blue color shows.

Started blowing July 10 3 PM no foam at all on the pot — power off for about 3 hours and finished about 5 PM July 11-19

D444 Oil –

7½ lbs linseed oil –
30 g Prussian blue ground twice in 1 pint of the weighed oil then stirred into all of the oil in copper kettle cold – Heated to 550°F –
Put in Blowing kettle and started to blow at 12 10 P.M. July 14-19 –
Very thick nearly solid 8 40 P.M.
Solid 9 05 – Steam off
cooled with water –
Time 8h 55m

The blowing tube holes were all thoroly cleaned out with drill for this experiment. 442-443 were made with holes partly plugged with oxidized oil,

D445 oil — (see 444)

7½ lbs linseed oil.
6 g Prussian Blue —
Prussian blue ground in one pint of the oil and then stirred in the whole — heated to 550°F 375°-550° in 35 minutes, stand with flame lowered temp down to 540° in 5 min then off.
Steam on blowing kettle. poured in and started air 3¹⁰ PM July 15-19
Very thick 10 PM
Solid — stopt by Major 4 AM — time 12h 50m
6 lb 15 oz taken out. —
5 oz skins etc from side of
7 4 oz — pot — kettle —
about 4 oz lost

C91

D446

7½ lbs Menhaden Fish Oil - Winter bleached

Put in blowing kettle and started with steam on low pressure

Start 10²⁵ AM July 16-19

July 17 power off about 9 o'clock for about 2 hours —

Steam off and stopt about 1,20 p.m. —

Solid and very little fish oil smell —

D 447

Blowing Menhaden Fish Oil —

7½ lbs Oil

100 g D433 Rosin — (MnO_2)

300 g D429 Rosin (PbO_2)

Started 9 ~~00~~ PM July 17-19

8 ~~00~~ AM July 18 nearly solid.

Poured out 10 ~~00~~ AM July 18 Solid —

D - 448

Blowing Raw Linseed Oil.

7½ lbs. Started in copper pot 12 30 PM 7/19/19 rising in Temp. to 550° F and allowed to remain at that Temp. for half hour at which time it was poured into blowing pot & heat on. Blown till noon Sunday at which time it was turned off by watchman. Started again 8 20 AM Monday.

Began to get Solid 3 AM Sunday
9 AM bubbles coming off - acid odor.
10 30 AM - very nearly solid.
11 15 AM - Thoroughly solid - Time 25 3/4 hrs.
Net of oil blown — $6\frac{13}{16}$ lbs.

4/22

D – 449

7½ lbs plain raw linseed oil put in oblong kettle, steam on full exhaust cracked, temperature readings hourly:

Started 3 PM 7/21

4 PM – 300° – Very evident burning gas.

5 – 290° – Acid odor.

6 –

7 –

8 –

9 –

10 –

11 – Practically solid

12 –

1

2 Off

Running time 10 hrs. Wt. 6 7/16 lbs

D - 450

① First experiment failed.

② 7½ lbs oil started 9⁰⁰ AM
Temp. 140°F - Started to add [illegible] (10 g.) 9³⁵.
while stirring this a greenish yellow foam
poured on the top.

310°	All foaming ceased - apparently absorbed	434
320°	Started adding PbO_2	9⁴⁵
335°	All in	10⁰¹
480	Two burners	10¹⁷
480°	Approxim. held till	10⁴⁵
Color	Brownish red.	
	Started blowing	10⁴⁵
	Low pressure [illegible]	
310°	- Foams considerably - thinning vapor	
	Foaming ceased - not so acid	11³⁰
230°		12⁰⁰
230°	Acid odor gone -	1¹⁵ PM
	Goat-like, fusel oil acid odor	3 PM
	Practically solid	4 "
	Allowed to run till	5

Dark brown in color, very sticky.

4/24

D-451

Linseed Oil and PbO_2

7½ lbs raw linseed oil and 250 g PbO_2 heated together in coffin pot

Oil started heating	1²⁰ PM
320° ~~Started adding~~ PbO_2	1⁵⁰
470° All PbO_2 in.	2¹⁰
480° Approx held till	2⁴⁰
started blowing	2⁴⁵
240° Acid odor light	4⁰⁰
220° No physical change	5⁰⁰
getting thick at bottom	8⁰⁰
[illegible]	9⁴⁵

D- 452

Linseed oil and varnish makers' lithard.

7 1/2 lbs raw linseed oil and 25g lithard heated to-gether in copper pot.

	Oil started heating –	9 20 AM
340°	Started to add lithard	9 35
350°	All in.	9 48
500°		10 05
490°	Aprox. till	10 35
240°	Started blowing (Dirty brown color)	11 15
260°		1 00
	Solid	2 15
	Allowed to blow till	4 00

Low pressure steam was used.

4/28/19

II - 453

7 1/2 lbs raw linseed oil
12 1/2 g - litharg.
12 1/2 g - Red lead.

Started in copper pot	—	10^22 AM
320° Began to add litharg	—	10^11 AM
360 " " " red lead	—	10^14
410 All in.		10^17
500		10^35
510 Held for 1/2 hr.		10^55
220° Started blowing		11^00
240 Acid odor burns eyes		12^00
230 No physical change		1^00 PM
225 " " "		2^00
220 Slightly thickened - bubbles		3^00
230 More thick — "		4^00
Thick and clubbery		5^00
Air just blowing thru		6^00

D - 454

4/29/19

7 1/2 lbs. raw linseed oil
25 g - red lead.

	Started in copper pot	1^50 PM
310°	Began to add lead	3^00
350°	All in	3^07
500°	Reached at	3^12
500-510	maintained till	3^42
	Started blowing (low pressure steam)	3^45
240°	Acid odor	4^45

D 455

D-455 Coarse Clays, etc —

1	200 Mesh Mica Flour. Amer. Mica Co. Canton Ga.	$21.50 per ton Canton Ga.
2	Mica Substitute, H. P. Binswanger 203 Broadway N.Y.	$28.50 per ton $6.50 est Freight.
3	A. Tale. Tale Products Co. New York;	$10.00 per ton. Mined at Glendon N.C.
4	(Asbestine etc) Charles A. Wagner ("S") 221 N. Front St. Phila.	18.00 " "
5	(Asbestine etc) Samuel Nevins Co. (43 clay) 109 S. Second St. Phila.	16.00 " "
6	(Asbestine etc) St Lawrence Tale Co. (Ta2 Clay) 7 E 42d St., New York	12.00 " " Mined at Natural bridge, ~~[illegible]~~ N.Y.
7	(Terra Alba) Katzenbach & Bullock Co. T.B. White Clay 100 William, N.Y.	18.75 " " " " " " "
8	(Terra Alba) Groxall Chemical & Supply Co (G.S.2)	
9	(Terra Alba) Innes Speiden Co. Inc (Clay No1) 46 Cliff St. N.Y.	50.00 Per ton
10	(Terra Alba +) Paper Makers Chemical Co. Easton, Pa. (Refined)	15.00 " " Mined at Spruce pine, N.C.
11	(coarse clay) Harris Clay Co. (Spruce pine Clay) Hillsboro, N.C.	16.00 " " " " Thompson, Del.
12	(coarse clay) Newark China Clay Co. (No2 China Clay) Wilmington Del.	17.00 " " " " " "
13	(Coarse clay) " " " " (Kaolo Powder) " "	45.00 " "
14	(coarse flakes) C.K. Williams & Co. Easton Pa. (L.G.V. Bolted Clay)	14.54 " " ex ship.
15	(Coarse flakes) John Richardson Co. Box 2887 Boston Mass. (G.R.) English	
16	(coarse flakes) Groxall Chemical & Supply Co. (G.S.7)	
17	(coarse flakes) " " " (G.S.9)	
18	(coarse flakes) J.C. Bueher, Boiling Springs, Pa.	undeveloped
19	(coarse flakes) Miner Edgar Co. (N.B. Clay) 30 Church St. (GSK2)	10.00 per ton Mc Intyre, Ga.
20	(coarse flakes) Groxall Chem & Supply Co. East Liverpool Ohio.	

D456

Coarse clays. (#9 contains colloid)

1	Peach Kaolin Co., Box 41 Chester, Pa.	$12.00 per ton	Stanton Del. (N.G. see 17 in clay pots)
2	Golding Sons Co., Hockessin, Del. (Golding China Clay)	$15.50 per ton.	mined at Hockessin, Del.
3	Columbia Kaolin & Aluminum Co, Washington D.C.	$10.00 " "	" " Gordon, Ga.
4	Moore & Munger, 29 Bdway, N.Y. (New Albion Washed Domestic)	$11.00 " "	" in Georgia.
5	B.F. Drakenfeld, 50 Murray St. N.Y. ("D" Powdered China Clay)	$35.00 " "	F.O.B. New York.
6	T. Poole Maynard, 226 Hurt Building, Atlanta, Ga.		
7	John W. Higman Co. New York. (G.S. English China Clay)	$18.00 " "	
8	Joshua Poole, East Liverpool, Ohio. (No 4)	$23.75 " "	F.O.B. New York.
9	Rossler & Hasslacher Chem. Co. New York. ("O" clay)	$16.00 " "	mined in Florida. (Contains much Colloidal)
10	John W. Higman Co. N.Y. (Potting "M.W." English china clay)	$15.00 " "	
11	John Richardson Co. 201 Devonshire St. Boston. (#30) Potting.	$15.08 " "	
12	Star Clay Co. Mertztown, Pa. (Powdered china Clay)	$15.00 " "	
13	L.A. Solomon Bro 216 Pearl St., N.Y.		
14	Moore & Munger, N.Y. (MAM English China Clay)	$20.00 " "	
15	C.B. Chrystal, N.Y. (A. Powdered Clay)		
16	B.F. Drakenfeld, N.Y. (L. China Clay powdered)	$45.00 per ton	F.O.B. New York.
17	Stanley Doggett Inc. 99 John St, N.Y. (B. Clay)		
18	John Richardson Co. Boston. (C.P.) (Potting)	$17.22 " "	
19	Hinshaw Fuller & Goodwin Co. N.Y. (Kiln dried, Bolted, English C.C.)	$55.00 " "	F.O.B. cars in Pennsylvania.
20	John W. Higman Co. N.Y. (IX English China clay)	$18.00 " "	

D 457

Clays - ~~a~~ a little too coarse — possibly OK.

1	John Richardson & Co. (Box 2887-Boston) (#247)	$19.78 per ton.	
2	Whittaker Clark & Daniels New York. (#34 clay)	$40.00 per. ton.	
3	H. P. Binswanger, 203 Bdway. N.Y. Pulv. English Kaolin.		dry -
4	John W. Higman Co. N.Y. Pulverized English China Clay	$17.00 per ton.	
5	John W. Higman Co. N.Y. English china clay.		
6	Groxall Chemical & Supply Co. G.S.4.		
7	T. Poole Maynard P.H.D. Atlanta, Ga. (No 2 Clay)		
√8	R.T. Vanderbilt Co., 50 E 42d St. N.Y. ("Shawnee" Pulv. clay.)	$15.00 Saylorsburg, Pa -	dry
9	C. K. Williams Co., Easton, Pa. (Immaculate powdered clay)	$16.00 Langley, S.C.	
10	Chas. A. Wagner, 221 N. Front St., Phila. Pa. (Snowflake)	$27.50	
11	Dixie Brick & Tile Co., Puryear, Tenn. (Clay No 1)	$4.00 per ton Puryear, Tenn.	
12	Roessler & Hasslacher Chem. Co. N.Y. ("G W" clay)	$80.00 per ton.	dry
13	Chas. M. Franzheim Co., City Bank Bldg, Wheeling W.Va. (#30 English C.C.)	$17.25 per long ton F.O.B. cars New York.	
14	Joshua Poole, East Liverpool, Ohio. (No 1)	$25.00 " " " " " " "	
15	S.C. Lyons & Bro, Bennington, Vermont, (China clay)		Unctious
16	Miner-Edgar Co. 30 Church St. N.Y. S.C. Powdered Clay.	$14.00 per ton McIntyre, Ga.	
17	Roessler & Hasslacher Co. 100 William St. N.Y. ("S.C." Clay)	13.50 " " mined in South Carolina.	
18	Hammill & Gillespie, 240 Front St, N.Y. (Bolted Lee Moor C.C.)	$55.00 " "	
19	J. Lee Smith & Co., N.Y. O.B.S. English China Clay.	$17.00 Per ton	dry
20	Samuel Nevins Co., Inc. 109 S. 2d St. Phila. #5 clay		

Clays About like what we use –

1	L.B. Carey, Rome Ga. (No 5 Pink China clay.)	$7.00 per ton Hepzibah, Ga.	
2	Albion Kaolin Co., Hepzibah, Ga.	$24.00 per long ton F.O.B. New York.	
3	Joshua Poole, East Liverpool, Ohio. (No 10)	$10.00 per ton McIntyre, Ga.	
4	Miner-Edgar Co., 30 Church St, N.Y. (G.W. Clay)	$12.00 " " Mt Holly Spgs. Pa.	
5	Holly Clay Corp'n, Real Estate Trust Bldg, Phila. (Washed clay.)		
6	Stanley Doggett Inc. (A. Clay)	$8.50 per ton.	
7	Paper Makers Chemical Co, Easton, Pa. (XI Georgia)	$8.00 Mines in Georgia.	gritcious
8	Moore & Munger, New York. (Paramount American Crude)	$11.00 Mines Toland, Pa.	dry
9	Philadelphia Clay Co. Phila, Pa. (Lump American China Clay)		
10	Whittaker Clark & Daniels, N.Y. (Clay No 37)		
11	Frederick E. Bausch, 1105 Chemical Bldg. St Louis.		
12	Roessler & Hasslacher Chem. Co., N.Y. (W. clay)	$35.00 ton. N.Y.	feels fine.
13	Philadelphia Clay Co. Phila Pa. (Pulverized Amer. China Clay)	$13.00 Mines Toland Pa.	feels coarse.
14	Robert Gilchrist, 82 Beaver St, N.Y. Anglo Amer. Talc. Corpn.	$21.00 per ton in paper bags F.O.b. Orange, N.J.	
15	L.B. Carey, Rome, Ga (No 4 White China Clay)		Gritcious.
16	T. Poole Maynard, 226 Hurt Bldg. Atlanta Ga. No 3 clay.		
17	John W. Higman Co. N.Y. (J.D.M. English China Clay)	$20.00 per ton.	
18	Hammill & Gillespie, N.Y. XXX Imported	$21.00 " "	
19	Paper Makers Chemical Co., Easton, Pa. (No 70 Clay)	$19.50 " " N.Y.	Gritcious
20	John Richardson Co. Box 2887, Boston. (C Z B English China Clay) (C L B?)	$18.02 " " N.Y.	

II-459

Clays about like what we use and finer —

1 Monarch Clay Mining Co. Bellevue Ky. Jennigan Spring Ball clay	$5.50 per ton	Paris, Tenn.
2 Paper Makers Chemical Co., Easton, Pa. #2 Refined	$8.50 " "	Langley S.C. in paper bags.
3 Aluminium Flake Co., Akron, Ohio.	$25.00 Per ton	Barberton, Ohio. dry.
4 ~~Chas. M. Frangheim Co. Wheeling, W.Va.~~ Interstate Clay Co. Sumter, S.C.	$10.00 per ton (2000 lb)	Congaree S.C. Quoted on by John W. Higman New York.
5 Savannah Kaolin Co., Gordon, Ga. (Washed white clay)	$10.00 per ton	Gordon, Ga.
6 Parsons & Whittemore Inc., 299 Bdway, N.Y. (No 1 McNamee China Clay)	$8.00 " "	Bath S.C.
7 Miner-Edgar Co., 52 Warren St., N.Y. (E.W.N. Powdered Clay)		
8 John W. Higman Co., 27 Bdway, N.Y. (No 45 Domestic China Clay)	$10.00 per ton	Congaree S.C.
9 T. Poole Maynard, 226 Hurt Bldg, Atlanta, Ga. (Clay No 1)		
10 Robert Gilchrist Co. 82 Beaver St. N.Y. Anglo Amer. Talc Corpn.	21.00 per ton	f.o.b. Orange N.J. see D 458-14
11 National Sales Co., Cincinnati, Ohio. #290 Clay.	$11.50 per ton	f.o.b. Stedman, S.C. bags 18¢ ea.
12 Parsons & Whittemore Inc. 299 Bdway N.Y. (#1 Pulverized clay)	$9.25 per ton	Bath S.C.
13 Stresen-Reuter & Hamock Inc. 122 S. Mich. Ave. Chicago. (#126 clay)	$10.25 " "	Langley S.C.
14 H.S. Grossman, 39 Cortlandt St. N.Y. (Washed No 45)	$12.00 per ton	f.o.b. Summit S.C.
15 A. Kleipstein Co., N.Y. (china clay)	$25.00 per ton	New York
16 H.P. Binswanger, 203 Bdway, N.Y. (Pulverized Domestic Kaolin)	$12.50 " "	paper bags $2.00 Freight est. $6.50
17 Paper Makers Chemical Co., Easton, Pa. (Refined No 1)	$12.50 " "	Langley S.C.
18 Hamrill & Gillespie 240-2 Front St N.Y. (A-1 Imported)	$23.25 " "	New York.
19 Whittaker, Clark & Daniels, N.Y. (Clay #41)		
20 John W. Higman Co., 27 Bdway, N.Y. ("Superb" Crude Domestic)	8.00 per ton	Hepzibah, Ga. Vnetious

Fine crude clays-colloid ⅔ particles not ~~[illegible]~~ washed out.

1 John Sant & Sons Company, East Liverpool, Ohio. (XI Pulv. Georgia)	$8.00	Hey Branch, Ga.	unctions
2 T. Poole Maynard, 226 Hurt Bldg, Atlanta Ga. (No 1 Clay)			dry
3 J. P. Prall, Woodbridge, N.J. (XI Fine clay.)			unctions
4 Miner-Edgar Co., N.Y. 30 Church St. (L.C. clay) "washed refined"		Akhahumpka, Fla.	unctions
5 Lake County Clay Co., Metuchen, N.J. ("Lake County" Clay) Edgar Bros.	$10.00	Edgar, Fla.	unctions
6 H. S. Grossman, 39 Cortlandt St. N.Y. {Mineral Products Co.} (Georgia Crude) Orglethorpe, Ga.	$8.00	Orglethorpe, Ga. (See (18) clay book)	unctions
7 Edgar Plastic Kaolin Co., Metuchen, N.J. (Edgar Clay)	$10.10	Edgar, Fla.	unctions
8 Papermakers Chemical Co. Easton, Pa. (Lump Florida)	$10.00	Okahumpka Fla.	
9 Parsons & Whittemore, 299 Bdway N.Y. ("M.N.W." China clay)	$6.00	Bath, S.C.	unctions
10 Colonial Clay Co., Paducah Ky	$3.00	Hickory Ky.	
11 Jas. A. & Wm. E. Hill, Abbeville, S.C. (XC.) (In lumps in paper bag)			unctions
12 Hand Clay Co., Canton, N.C. ("Sprucepine Hand clay.")	$15.00	Woodrow, N.C. (in filter press cake)	
13 C. B. & S.C. Co. Hazel, Ky (No 9 B.C.)			unctions
14 Moon Clay & Kaolin Co., Trenton N.J. (No 2 Sagger)	$4.00	Trenton, N.J.	unctions
15 Moon Clay & Kaolin Co., Trenton N.J. (No 1 Sagger)	$4.50	Trenton N.J.	unctions.
16 Consolidated Clay Co. 10 W State St., Trenton.	$3.95	Fob Trenton.	unctions.
17 Victor G. Bloede Co. Balto. Md. Red clay -	$2.50	Pawtucket, Md.	unctions,
18 Estate W. H. Cutter, Woodbridge, N.J. (XI Retort Clay)	$7.50	purtou Woodbridge N.J.	unctions.
19 L. A. McHose Inc., Perth Amboy, N.J. (Fine blue)	$6.00	Perth Amboy, N.J.	unctions
20 Gladding, McBean & Co., San Francisco, Cal. (Ground Fire Clay)	$7.50	Lincoln, Cal.	unctions & grit.

II-461 - Fine crude clays

1	C.B. & S.C. Co., Hazel, Ky. (#10 B.C.)	colloid particles not washed out. mostly colloid.	
2	W.H. Gutter, Woodbridge, N.J. (No 1 Fine Clay)	8.00 per ton - Woodbridge, N.J.	unctions
3	J.P. Pratt, Woodbridge, N.J. (Deep buff clay)		unctions
4	Dixie Brick & Tile Co., Puryear, Tenn. (Clay #2)	$5.00 per ton - Puryear, Tenn.	dry
5	Armstrong Cork Co., Beaver Falls, Pa.	$3.50 per ton Beaver Falls Pa.	unctions
6	Paducah Clay Co., Paducah, Ky. (Lofton, No 1)	$3.00 per ton. Paducah Ky.	unctions
7	Monarch Clay Mining Co., Bellevue, Ky. (Jernigan Sagger)	3.00 per ton Bellevue Ky.	unctions
8	The Grossley Mining Co., Toms River N.J. (#3 clay)	$3.00 per ton Toms River.	unctions
9	Jas. P. Pratt, Woodbridge, N.J. (#1 Sagger Clay)		unctions
10	L.A. McHose Inc., Perth Amboy, N.J. (#7)	$4.75 per ton Perth Amboy.	dry
11	Kern Commercial Co., N.Y. (Imported Crucible)	about $22.00 per ton - N.Y.	unctions
12	Enterprise White Clay Co., Real Estate Trust Bldg, Phila. (Mayfield No 2 Ky Ball clay)	$5.50 per ton at mines. (Mayfield Ky.)	dry
13	Mayfield Clay Co., Mayfield Ky (No 2 Ball clay)	$4.00 per ton (Mayfield Ky)	unctions
14	Monarch Clay Mining Co., Bellevue, Ky. (Jernigan Gray Ball)	$5.50 per ton, Paris, Tenn.	unctions.
15	Moon Clay & Kaolin Co. (J.F. Morton) Trenton, N.J. (No 2 Sagger) (Sample marked Chocolate Clay)	$4.00 " " Trenton, N.J.	unctions.
16	Mayfield Clay Co., Mayfield, Ky. (#1 Clay)	$3.00 per ton Mayfield Ky	unctions
17	Monarch Clay Mining Co., Bellevue, Ky. (Jerinigan Sagger) (Sample marked #9 Ball)	$3.00 per ton Paris, Tenn.	unctions
18	Paducah Clay Co., Paducah Ky. (Howard No 1 clay)	$3.00 per ton F.O.B. Benton Ky.	unctions
19	Paducah Clay Co., Paducah Ky (W.&S. Clay)	$3.00 " " F.O.B. " "	dry
20	Foster, Verner & Rice, Tuscaloosa, Alabama.	Undeveloped.	unctions

II-462 Fine Crude Clays.

1	F.T. Carmack, Burnsville, Miss.			
2	Product Sales Co., 32 S Calvert St, Balto. Md (Berkeley Clay)	$8.00 per ton	Cold Springs, Va.	
3	H.S. Crossman, 39 Cortlandt St., N.Y. (Crude Alabama C.C.)	$7.50 " "	Allen, Ala.	unctious
4	Monarch Clay Mining Co., Bellevue, Ky. (Clive gray Ball)	$5.50 per ton	F.O.B. Paris Tenn.	unctious but does not swell in water
5	Wm Gauley, New Castle, Colo.	$12.00 per ton	New Castle, Colo. looks like	V. Hard Unctious.
6	Jas. P. Pratt, Woodbridge, N.J. (Irony Fine)			Unctious.
7	Grimora Manganese Corp'n, Grimora, Va. ("Clay") buff.	no quotations.		dry
8	Grimora Manganese Corp'n, Grimora, Va. ("Clay") Red.	" "		dry
* 9	J.A. Jeffe, Rockland, Mich.	5.50 per ton f.o.b Rockland Mich.		soft fine.
10	Moon Clay & Kaolin Co., Trenton N.J. (~~"Sandy Black"~~) Red	($3.75 per ton)	Trenton.	Unctious
11	H.N. Cooper, Hollow Rock ~~Clay~~ (Tenn.)	($1.50 per ton)		~~[illegible]~~
12	Empire Clay Mining Co. 53 Providence St. Albany, N.Y. Albany Slip Clay	$4.50 per ton f.o.b. Albany.		dry.
13	Jackson Bros., Clay Mining Co., Paris, Tenn. (no marks)	$6.00 ~~$3.00~~ per ton		Unctious
14	Enterprise White Clay Co. Phila. (~~X~~30 grade plastic clay)	$3.50 per ton f.o.b. mines in N.J.		dry
15	J.P. Pratt, Woodbridge, N.J. (Tough blue)			dry
16	Kern Commercial Co. New York. (Imported Crucible clay)	about $22.00 per ton New York.		Unctious
17	Mayfield Clay Co., Mayfield, Ky. (~~X~~3 Ball clay)	$5.00 per ton Mayfield Ky		Unctious
18	Monarch Clay Mining Co., Bellevue, Ky (Grabble Black)	$5.50 Paris Tenn.		Unctious
19	J.F. Morton, Trenton, N.J. (Rockingham Clay)	$4.25 per ton Trenton.		Unctious.
20	Wm Hinwiddie, Metuchen, N.J. BLACK	$35.00 per ton - f.o.b. Metuchen N.J.		Unctious.

II-463

Crude Gritty Clays, White to gray

1 J.A. & Wm E. Hill, Abbeville S.C. (Loose in box with NaC) — like fullers earth
2 Paper Makers Chemical Co. Easton, Pa. (XX72 clay imported) — $15.50 per ton New York.
3 Jas. A. & Wm E. Hill, Abbeville, S.C. (XA) — like fullers earth.
4 A.B. Lehman, Fayetteville, Pa. — Mine not developed.
5 A.H. Mackay, 130 Pearl St., N.Y. — $3.00 per ton, Georgia.
6 Katzenbach & Bulloch 100 Wm St. N.Y. (XX10 White clay) — $17.00 Langley S.C.
7 Golding Sons Co., Butler, Ga (Georgia Clay) — $7.00 per ton mined at Butler Ga.
8 Penn Tile Works, Aspers, Pa. — $5.00 " " " " Aspers Pa. like fullers Earth
9 Victor G. Bloede Co. Frederick Road Sta. Baltimore, Md. White clay — $3.00 " " Pawtucket, Md.
10 Atlas Mineral Products Co., Lincoln, N.J. (M Clay) — $4.50 " " Merztown, Pa.
11 Foote Mineral Co. Phila. (Finely powdered Dry Branch Clay) — like fullers earth
12 Jas. S. Maffitt, Perryville, Md (washed by hand) — like fullers Earth.
13 Amos B. Lehman, Fayetteville, Pa. — Mine not developed —
14 Nat'l Clay Refining Co. Shamrock Station Pa (320W clay) — mine not operating no quotation.
15 Western Kaolin Co., 4101 Olive St., St Louis, Mo. — $4.00 per ton F.O.B. Shamrock, Pa.
16 Hill-Grossett Inc. (Powd China Clay) — $11.00 per ton F.O.B. Glen Allen, Mo.
17 Atlas Mineral Products Co., Lincoln, N.J. (R clay) — like fullers earth
18 The Barr Co., Narvon Pa. — $9.00 per ton Merztown, Pa.
19 Lester Clay Co., Jacksonville, Fla. Fuller's Earth. — 3.00 per ton Narvon, Pa. like fullers earth.
20 Ostrander Fire Brick Co., Troy, N.Y. — $12.00 per ton Attapulgus, Ga. fullers earth.
like fullers earth.

II-464

Crude gritty clays. gray to black.

× 1 Monarch Clay Mining Co. Bellume Ky. (Bowden wad)	$3.00 per ton F.O.B, Paris Tenn.	
2 Ostrander Fire Brick Co., Troy, N.Y. ("E")	$2.50 per ton f.o.b Perth Amboy N.J.	
3 Ostrander Fire Brick Co., Troy, N.Y. ("A")	4.00 per ton " " " "	
4 L.A. McHose Inc., Perth Amboy, N.J. (Star Blue)	5.50 per ton " " " "	
5 W.H. Gutter Estate, Woodbridge, N.J. ? (#1 Retort)	$7.50 per ton Woodbridge, N.J.	
6 " " " ?		
7 Crossley Mining Co., Crossley Station, Toms River, N.J. #2 clay	$3.00 per ton Toms River, N.J.	
× 8 J.P. Prall, Woodbridge, N.J. (Buff clay)		
× 9 J.F. Morton, Trenton, N.J. ("F" clay)	4.00 per ton Trenton -	
10 L.A. McHose Inc., Perth Amboy, N.J. ("C" Retort)	$4.50 per ton Perth Amboy, N.J.	
11 Geo. S. Mepham & Co., East St Louis, Ill. (#7 Gray Clay)	$16.00 " " East St. Louis Ill.	
×× 12 National Sales Co., Cincinnati, Ohio. (#301 Clay)	$4.50 " " Narvon Pa.	
× 13 James P. Prall, Woodbridge, N.J. (Irony Sandy)	No quotation.	
14 Jas. W. Collins, 402 Frick Bldg, Pittsburgh Pa.		
15 L.B. Garey, Rome, Ga. (No 2)		
16 L.B. Garey, Rome, Ga. (Clay #3)		
⊙ 17 C.K. Williams & Co. Easton, Pa. (#1045 Pigment) Red		Coarse grit - libre stone -
18 L.A. McHose Inc., Perth Amboy, N.J. (Red)	$32.00 per ton delivered.	
× 19 Cherokee Ochre Co., Cartersville, Ga.	$39.00 per ton Perth Amboy, N.J.	
20 L.A. McHose Inc., Perth Amboy, N.J. (Black Retort Clay)	$4.70 per ton Perth Amboy, N.J.	

D465 –

Wm H. Schule clay, which we are using, separated by floatation in three parts –

100g total –

77.5	V. fine.
16.6	fine
.4	coarse
94.5	
5.5	colloidal
100.0%	

washed out and lost –

Same test on Lion Clay –

100g total

37.6	V. fine
39.3	fine.
12.3	coarse.
89.2	
10.8	colloidal
100.0	

D466 Rosin

5000g (11 lbs) Rosin,

200g Pyrolusite,
200g Litharge

Melt Rosin, when temperature is about 400°F add Pyrolusite and Litharge slowly — then bring temp to 500° and hold for 15 min.

D467

Blowing Castor Oil,

7½ lbs Castor oil –

Steam on cracks, exhaust open full about 220° F.

Started blower 950 AM Oct 28-19.

24h to 950
7h 10m
31h 10m

5 PM Oct 29 put steam on full and only cracked the exhaust.

24h to 5
6h 30m
30h 30m

1130 PM solid –

30h 30m high temp.
31h 10m at 220°F
61h 40m total time blowing

very tough sticky mass.

Clay from R.T. Vanderbilt Co,
K. Georgia .260
Dixie .241
Blue Ridge .252

Tested By R. Lee

June 18

628

10.55 Oil rosin cotton
5 min

11 $\frac{1}{3}$ Chalk 5

11.5 $\frac{1}{3}$ Chalk 5

11.10 $\frac{1}{3}$ Chalk 15

11.25 Surf Treater 45
~~out~~

12.10 Out

grind
1 hour

June 19

629

11 Oil rosin Cotton

Sufficates 5 min

11 .5 $\frac{1}{3}$ Chalk 5

11 .10 $\frac{1}{3}$ Chalk 5

11 .15 $\frac{1}{3}$ Chalk 30

11 46 Out

Original 1 Hour

I Shut the Oil

off 12

Weight rosin

49.39

[ITEM(S) FOUND IN BOOK]

Sept 4

12 Old Rosin Collon
5- Cut - +
10 ½ Cut + Clay
15- Cut - +
20 ½ Cut + Clay
25- Cut - +
30 + Cut - ½ Clay
35- Cut - +
12 45- Cut - +
1 00 Cut -
12 35- Thermometer 334
11 40 338
11 45- 344
11 50 344
11 55- 350
1 00 35-6 | 1.20 out
as high 360

[ITEM(S) FOUND IN BOOK]

good		V good	VV good
239	Zinc white		223
		246-2 blanc fixe	246-3 - blanc fixe
		248 " "	
250	blanc fixe & gas black	256 " "	
259	blanc fixe		271 Red Lead.
274	Litharge		272 Lead Chromate.
283	Lead Chromate.		

[ITEM(S) FOUND IN BOOK]

3) 525 / 175 g Alcohol

Condurite Resin 216 g.
Para 2 g.
Alcohol 525 g.
solution for three lots, 3) 727
242
242
242
242
242
242
242
1

take 245 g solution
56 g cotton
574 g chalk

Make three lots with one lot of solution.

[ITEM(S) FOUND IN BOOK]

Condensite Resin	10% x7	70
Para	1/10 of 1%	0.7
Cotton	8%	56
Chalk	82%	574
		700.7 g